

## ABSTRACT OF THE DISCLOSURE

Apparatus and processes are provided for the generation of hydrogen which employ a reformer and water gas shift reactor. The apparatus and processes respond quickly to changes in hydrogen generation. The reformat  
5 in a region between the reformer and prior to exiting the water gas shift reactor is cooled by indirect heat exchange with water whereby substantially all the water is vaporized to steam, the steam is separated from liquid water and then introduced into the reformat.